	Type	L#	Hits	Search Text	DBs	Time Stamp	Comm I	Error Definitio n
1	BRS	L26	485	semiconduct\$3 adj (nanocrystal)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:23		
2	BRS	L27	792	semiconduct\$3 same (nanocrystal) ~	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:24		
သ	BRS	L28	47	ionic adj conjugate	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:24		
4	BRS	L29	76250	linker or (linking adj group)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:25		
5	BRS	L30	43284	fusion adj protein	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:25		
6	BRS	L31	1	27 same 29 same 30	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:26		
7	BRS	L32		27 same 28	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:26		
∞	BRS	L33	<u> </u>	(CdSe or ZnS) same (ionic adj conjugate)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:26		
9	BRS	L34	5815	leucine adj zipper	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:27		
10	BRS	L35	4119	maltose adj binding adj protein	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:27		•
	BRS	L36	1024	polyaspartate	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:27		
12	BRS	L37	7	immunoglobulin adj g adj binding adj protein	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:28		
13	BRS	L38	—	(34 or 35 or 36 or 37) same 28	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:29		
14	BRS	L39	,_	(34 or 35 or 36 or 37) same 27	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:29		
15	BRS	140	343	anderson adj george.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:30	Œ	
16	BRS	L 41	1	mattoussi adj hedi.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/11/01 18:30		

(FILE 'HOME' ENTERED AT 18:34:43 ON 01 NOV 2004)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT

18:35:32 ON 01 NOV 2004

- L1 3830 S SEMICONDUCT? (P) NANOCRYSTAL
- L2 22 S IONIC CONJUGATE
- L3 1851242 S LINK?
- L4 167718 S FUSION PROTEIN
- L5 2 S L4 (P) L3 (P) L1
- L6 1 DUPLICATE REMOVE L5 (1 DUPLICATE REMOVED)
- L7 0 S L1 (P) L2
- L8 43854 S CDSE OR ZNS
- L9 0 S L8 (P) L2
- L10 2 S L8 (P) L3 (P) L4
- L11 1 DUPLICATE REMOVE L10 (1 DUPLICATE REMOVED)
- L12 0 S L11 NOT L6
- L13 18890 S LEUCINE ZIPPER
- L14 7855 S MALTOSE BINDING PROTEIN
- L15 790 S POLYASPARTATE
- L16 121 S IMMUNOGLOBULIN G BINDING PROTEIN
- L17 27610 S L13 OR L14 OR L15 OR L16
- L18 0 S L17 (P) L2
- L19 3 S L17 (P) L1
- L20 2 DUPLICATE REMOVE L19 (1 DUPLICATE REMOVED)
- L21 15057 S ANDERSON G?/AU
- L22 160 S MATTOUSSI H?/AU
- L23 867 S MAURO M?/AU
- L24 356 S BAWENDI M?/AU
- L25 164 S SUNDAR V?/AU
- L26 16502 S L21 OR L22 OR L23 OR L24 OR L25
- L27 1 S L26 AND L2
- L28 1 S L27 NOT (L11 OR L20)
- L29 115 S L26 AND L1
- L30 2 S L29 AND L3 AND L4
- L31 1 DUPLICATE REMOVE L30 (1 DUPLICATE REMOVED)
- L32 1 S L31 NOT L28

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ILE 'MEDLINE' ENTERED AT 18:35:32 ON 01 NOV 2004
ILE 'CAPLUS' ENTERED AT 18:35:32 ON 01 NOV 2004
SE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. LEASE SEE "HELP USAGETERMS" FOR DETAILS.
OPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)
ILE 'BIOSIS' ENTERED AT 18:35:32 ON 01 NOV 2004
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ILE 'EMBASE' ENTERED AT 18:35:32 ON 01 NOV 2004
OPYRIGHT (C) 2004 Elsevier Inc. All rights reserved.
ILE 'SCISEARCH' ENTERED AT 18:35:32 ON 01 NOV 2004
opyright (c) 2004 The Thomson Corporation.
ILE 'AGRICOLA' ENTERED AT 18:35:32 ON 01 NOV 2004
> s semiconduct? (p) nanocrystal
                       3830 SEMICONDUCT? (P) NANOCRYSTAL
> s ionic conjugate
                             22 IONIC CONJUGATE
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               1851242 LINK?
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                 167718 FUSION PROTEIN
> s 14 (p) 13 (p) 11
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                                                                136:196403
OCUMENT NUMBER:
ITLE:
                                                               Luminescent quantum dot-adaptor protein-antibody
                                                               conjugates for use in fluoroimmunoassays
                                                              Goldman, E. R.; Balighian, E. D.; Kuno, M. K.;
Labrenz, S.; Tran, P. T.; Anderson, G. P.; Mauro, J.
M.; Mattoussi, H.
Center for Bio/Molecular Science and Engineering, U.S.
UTHOR(S):
ORPORATE SOURCE:
                                                               Naval Research Laboratory, Washington, DC, 20375, USA
                                                               Physica Status Solidi B: Basic Research (2002),
OURCE:
                                                               229(1), 407-414
CODEN: PSSBBD; ISSN: 0370-1972
                                                               Wiley-VCH Verlag Berlin GmbH
UBLISHER:
OCUMENT TYPE:
                                                               Journal
                                                               English
ANGUAGE:
         A method for the prepn. and characterization of bioinorg. conjugates made with highly luminescent ***semiconductor*** CdSe-ZnS core-shell
         quantum dots (QDs) and antibodies for use in fluoroimmunoassays is
         presented. The conjugation strategy employs the consequence engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein, attached to the QDs via engineered mol. adaptor protein engineered mol. adaptor p
         presented. The conjugation strategy employs two routes: 1. Use of an
        engineered moi. adaptor protein, attached to the QDS via electrostatic/hydrophobic self-assembly, to ***link*** the inorg. fluorophore with antibodies, and 2. use of avidin, also electrostatically self-assembled onto the ***nanocrystal*** surface, which allows QD conjugation to biotinylated antibodies via avidin-biotin binding scheme. With this approach, the av. no. of antibodies conjugated to a single QD can be varied. In addn., we have developed a simple purifn. strategy based on mixed compn. conjugates of the mol. adaptor and a second "inert" two-domain ***fusion*** ***protein*** that allows the use of affinity chromatog. OD/adaptor-antibody conjugates were successfully
         affinity chromatog. QD/adaptor-antibody conjugates were successfully employed in fluoroimmunoassays for the detection of small mol. analytes, 2,4,6-trinitrobenzene (TNB) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX). We also demonstrate the use of QD/adaptor-antibody conjugates for
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fluoroimmunoassays using a model protein system.

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THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
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   (FILE 'HOME' ENTERED AT 18:34:43 ON 01 NOV 2004)
   FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
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      1851242 S LINK?
        167718 S FUSION PROTEIN
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             1 DUPLICATE REMOVE L5 (1 DUPLICATE REMOVED)
·s 11 (p) 12
            0 L1 (P) L2
·s cdse or zns
        43854 CDSE OR ZNS
· s 18 (p) 12
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s 18 (p) L3 (p) 14
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· duplicate remove 110
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EP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
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·s 111 not 16
            0 L11 NOT L6
·s leucine zipper
        18890 LEUCINE ZIPPER
·s maltose binding protein
         7855 MALTOSE BINDING PROTEIN
· s polyaspartate
          790 POLYASPARTATE
·s immunoglobulin G binding protein
          121 IMMUNOGLOBULIN G BINDING PROTEIN
· s 113 or 114 or 115 or 116
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· s 117 (p) 12
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· s 117 (P) 11
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· d 120 1-2 ibib abs
O ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
CESSION NUMBER:
                          2004:810733 CAPLUS
                          Self-assembly of phage semiconductor nanowires
TLE:
THOR(S):
                          Sweeney, Rozamond; Georgiou, George; Iverson, Brent
                          Department of Chemistry and Biochemistry, University
RPORATE SOURCE:
                          of Texas at Austin, Austin, TX, 78712, USA
                         Abstracts, 60th Southwest Regional Meeting of the American Chemical Society, Fort Worth, TX, United States, September 29-October 4 (2004), SEPT04-398. American Chemical Society: Washington, D. C.
URCE:
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14

FERENCE COUNT:

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CODEN: 69FVXC
                                     Conference; Meeting Abstract
OCUMENT TYPE:
        ***Semiconductor***
                                           and metallic nanowires have great potential as
     nano-electronic circuit components. The organization of nanowires into useful devices remains difficult because of problems in directing self-assembly of individual components. Biol. methods of self-assembling nanowires are being explored because of the high potential for
     specificity, the diversity of connections, and the ease of manipulation of
     biol. interactions. Previous work demonstrated that phage could be employed as templates for the synthesis of ***semiconductor*** and metallic nanowires. The next step is to assemble the phage nanowires into useful devices by self-assembly of individual phage. We have exploited ***leucine*** ***zipper*** interactions at the ends of the phage as
     a means to assemble phage into one- and two-dimensional arrays.
     demonstrate the in situ organization of two different sizes of
        ***semiconductor***
                                            ***nanocrystals*** into alternating linear
     arrays. Future work includes modifying the phage ends with trimeric
***leucine*** ***zippers*** and modulating the length of individual
     phage.
^{20} ANSWER ^{2} OF ^{2} CAPLUS COPYRIGHT ^{2004} ACS on STN DUPLICATE ^{1}
                                     2001:211739 CAPLUS
CCESSION NUMBER:
                                     134:333943
OCUMENT NUMBER:
                                    Bioconjugation of highly luminescent colloidal
ITLE:
                                     CdSe-ZnS quantum dots with an engineered two-domain
                                     recombinant protein
                                    Mattoussi, H.; Mauro, J. M.; Goldman, E. R.; Green, T. M.; Anderson, G. P.; Sundar, V. C.; Bawendi, M. G.
JTHOR(S):
                                    Optical Sciences Division, United States Naval
DRPORATE SOURCE:
                                    Research Laboratory, Washington, DC, 20375, USA Physica Status Solidi B: Basic Research (2001), 224(1), 277-283
DURCE:
                                     CODEN: PSSBBD; ISSN: 0370-1972
JBLISHER:
                                    Wiley-VCH Verlag Berlin GmbH
OCUMENT TYPE:
                                     Journal
ANGUAGE:
                                     English
     The authors present a novel approach, based on mol. self-assembly driven
     by electrostatic attractions, for conjugating inorg. colloidal ***semiconductor*** ***nanocrystals*** (quantum dots:
                                                                               (quantum dots: QDs) having
     neg. charged surfaces with a 2-domain recombinant protein bearing a pos. charged C-terminal ***leucine*** ***zipper*** domain.
     Aggregation-free QD/protein conjugate dispersions were prepd. Conjugates retain both properties of the starting materials, i.e., biol. activity of the protein and spectroscopic characteristics of the QDs. Such hybrid bio-inorg. conjugates represent a powerful fluorescent tracking tool, because they combine advantages of CdSe-ZNS quantum dots, such as chem. stability and a wide range of size-dependent luminescence emission
     properties, with a straightforward electrostatic conjugation approach.
     The authors describe the design and prepn. of a model QD/protein conjugate and present functional characterization of the conjugate using luminescence and bioassays.
FERENCE COUNT:
                                    19
                                              THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS
                                              RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
d his
     (FILE 'HOME' ENTERED AT 18:34:43 ON 01 NOV 2004)
     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     18:35:32 ON 01 NOV 2004
              3830 S SEMICONDUCT? (P) NANOCRYSTAL
                  22 S IONIC CONJUGATE
          1851242 S LINK?
           167718 S FUSION PROTEIN 2 S L4 (P) L3 (P) L1
                   1 DUPLICATE REMOVE L5 (1 DUPLICATE REMOVED)
                   0 S L1 (P) L2
            43854 S CDSE OR ZNS
                   0 \text{ S L8 (P) } \text{L2}
                   2 S L8 (P) L3 (P) L4
                   1 DUPLICATE REMOVE L10 (1 DUPLICATE REMOVED)
0 S L11 NOT L6
            18890 S LEUCINE ZIPPER
              7855 S MALTOSE BINDING PROTEIN
                790 S POLYASPARTATE
               121 S IMMUNOGLOBULIN G BINDING PROTEIN
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27610 S L13 OR L14 OR L15 OR L16
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3 S L17 (P) L1
19
20
               2 DUPLICATE REMOVE L19 (1 DUPLICATE REMOVED)
> s anderson g?/au
21
         15057 ANDERSON G?/AU
> s mattoussi h?/au
           160 MATTOUSSI H?/AU
> s mauro m?/au
           867 MAURO M?/AU
> s bawendi m?/au
           356 BAWENDI M?/AU
> s sundar v?/au
           164 SUNDAR V?/AU
> s 121 or 122 or 123 or 124 or 125
         16502 L21 OR L22 OR L23 OR L24 OR L25
> s 126 and 12
              1 L26 AND L2
> s 127 not (111 or 120)
              1 L27 NOT (L11 OR L20)
> d 128 1 ibib abs
28 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
CCESSION NUMBER:
                            2001:713679 CAPLUS
OCUMENT NUMBER:
                            135:269662
                            Inorganic particle conjugates
    ***Mattoussi, Hedi*** ; ***Anderson, George P.***
; Mauro, J. Matthew; ***Bawendi, Moungi G.*** ;
ITLE:
NVENTOR(S):
                              ***Sundar, Vikram C.***
ATENT ASSIGNEE(S):
                            Massachusetts Institute of Technology, USA: Naval
                            Research Laboratory
OURCE:
                            PCT Int. Appl., 48 pp.
                            CODEN: PIXXD2
OCUMENT TYPE:
                            Patent
                            English
ANGUAGE:
AMILY ACC. NUM. COUNT:
ATENT INFORMATION:
    PATENT NO.
                           KIND
                                    DATE
                                                 APPLICATION NO.
                                                                             DATE
    wo 2001071354
                             Ą2
                                    20010927
                                                  wo 2001-us8788
                                                                              20010320
    wo 2001071354
                             Α3
                                    20020801
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             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
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    US 2002182632
                                                  EP 2001-924209
    EP 1266223
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                                    20021218
                                                                              20010320
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
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21 T2 20030924 JP 2001-569490
INFO.: US 2000-190766P
WO 2001-US8788
             IE,
    JP 2003528321
                                                                              20010320
RIORITY APPLN. INFO.:
                                                                              20000320
                                                                             20010320
THER SOURCE(S):
B The ***ionic***
                           MARPAT 135:269662
                            ***conjugates***
                                                    include an inorg. particle
    electrostatically assocd. with a macromol. which can interact specifically
    with predetd. chem. species or biol. targets.
> d his
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17

(FILE 'HOME' ENTERED AT 18:34:43 ON 01 NOV 2004)

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FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 18:35:32 ON 01 NOV 2004
L1
             3830 S SEMICONDUCT? (P) NANOCRYSTAL
L2
               22 S IONIC CONJUGATE
L3
          1851242 S LINK?
L4
           167718 S FUSION PROTEIN
L5
                 2 S L4 (P) L3 (P) L1
L6
                 1 DUPLICATE REMOVE L5 (1 DUPLICATE REMOVED)
L7
                 0 S L1 (P) L2
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L8
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L11
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L13
L14
                  S MALTOSE BINDING PROTEIN
L15
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L16
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L18
L19
                 2 DUPLICATE REMOVE L19 (1 DUPLICATE REMOVED)
L20
L21
            15057 S ANDERSON G?/AU
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L24
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L25
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L26
            16502 S L21 OR L22 OR L23 OR L24 OR L25
L27
                1 S L26 AND L2
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L28
=> s 126 and 11
L29
             115 L26 AND L1
=> s 129 and 13 and 14
L30
               2 L29 AND L3 AND L4
=> s 130 not128
MISSING OPERATOR L30 NOTL28
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.
=> duplicate remove 130
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KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
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=> s 131 not 128
L32
               1 L31 NOT L28
=> d 132 1 ibib abs
L32 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS ON STN
                             2002:91272
ACCESSION NUMBER:
                                          CAPLUS
DOCUMENT NUMBER:
                             136:196403
TITLE:
                             Luminescent quantum dot-adaptor protein-antibody
                             Conjugates for use in fluoroimmunoassays
Goldman, E. R.; Balighian, E. D.; Kuno, M. K.;
Labrenz, S.; Tran, P. T.; ***Anderson, G. P.***
Mauro, J. M.; ***Mattoussi, H.***
AUTHOR(S):
CORPORATE SOURCE:
                             Center for Bio/Molecular Science and Engineering, U.S.
                             Naval Research Laboratory, Washington, DC, 20375, USA
SOURCE:
                             Physica Status Solidi B: Basic Research (2002),
                             229(1), 407-414
                             CODEN: PSSBBD; ISSN: 0370-1972
PUBLISHER:
                             Wiley-VCH Verlag Berlin GmbH
DOCUMENT TYPE:
                             Journal
LANGUAGE:
                             English
     A method for the prepn. and characterization of bioinorg. conjugates made with highly luminescent ***semiconductor*** CdSe-ZnS core-shell
AB
     quantum dots (QDs) and antibodies for use in fluoroimmunoassays is
                  The conjugation strategy employs two routes: 1. Use of an
     presented.
     engineered mol. adaptor protein, attached to the QDs via electrostatic/hydrophobic self-assembly, to ***link***
                                                                           the inorg.
     fluorophore with antibodies, and 2. use of avidin, also electrostatically self-assembled onto the ***nanocrystal*** surface, which allows OD
                                                          surface, which allows QD
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conjugation to biotinylated antibodies via avidin-biotin binding scheme. With this approach, the av. no. of antibodies conjugated to a single QD can be varied. In addn., we have developed a simple purifn. strategy based on mixed compn. conjugates of the mol. adaptor and a second "inert" two-domain ***fusion*** ***protein*** that allows the use of affinity chromatog. QD/adaptor-antibody conjugates were successfully employed in fluoroimmunoassays for the detection of small mol. analytes, 2,4,6-trinitrobenzene (TNB) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX). We also demonstrate the use of QD/avidin-antibody conjugates for fluoroimmunoassays using a model protein system. REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT => d his (FILE 'HOME' ENTERED AT 18:34:43 ON 01 NOV 2004) FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 18:35:32 ON 01 NOV 2004 3830 S SEMICONDUCT? (P) NANOCRYSTAL 22 S IONIC CONJUGATE

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L2
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L3
          167718 S FUSION PROTEIN
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L6
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18890 S LEUCINE ZIPPER
L12
L13
            7855 S MALTOSE BINDING PROTEIN
L14
             790 S POLYASPARTATE
L15
             121 S IMMUNOGLOBULIN G BINDING PROTEIN
L16
           27610 S L13 OR L14 OR L15 OR L16
L17
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3 S L17 (P) L1
L18
L19
                 DUPLICATE REMOVE L19 (1 DUPLICATE REMOVED)
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           15057 S ANDERSON G?/AU
             160 S MATTOUSSI H?/AU
L22
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             164 S SUNDAR V?/AU
           16502 S L21 OR L22 OR L23 OR L24 OR L25
L26
L27
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             115 S L26 AND L1
L30
                 S L29 AND L3 AND L4
               1 DUPLICATE REMOVE L30 (1 DUPLICATE REMOVED)
L31
               1 S L31 NOT L28
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COST IN U.S. DOLLARS
                                                     SINCE FILE
                                                                       TOTAL
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                                                                     SESSION
FULL ESTIMATED COST
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
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STN INTERNATIONAL LOGOFF AT 18:45:10 ON 01 NOV 2004

ENTRY

-3.50

SESSION

-3.50